## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A sensor for a bearing, comprising:

a sensor being incorporated into the bearing or its surroundings, wherein

the sensor is configured to decrease an output voltage in conjunction with an increase of measured temperature,

wherein the sensor is a temperature sensor which detects an abnormality of the bearing, and

wherein an output voltage characteristic of the temperature sensor is linearized within a temperature range of from 0 °C to 200 °C.

2. (Currently Amended) ~~The sensor according to claim 1 wherein~~ A sensor for a bearing comprising:

a sensor being incorporated into the bearing or its surroundings, wherein

the sensor is configured to decrease an output voltage in conjunction with an increase of measured temperature,

wherein the sensor is a temperature sensor which detects an abnormality of the bearing, and

wherein one or more fixed resistors is connected to the sensor.

3. (Previously Presented) The sensor according to claim 2, wherein the sensor is constructed by a thermistor, and wherein the one or more fixed resistors are connected in parallel with the thermistor.

4. (Original) The sensor according to claim 3, wherein the thermistor is constructed by a NTC thermistor having a negative temperature characteristic.

5. (Previously Presented) The sensor according to claim 3, wherein the thermistor is constructed by one of a PTC thermistor and a silicon thermistor, and wherein the one of the PTC thermistor and the silicon thermistor has a positive temperature characteristic.

6. (Original) A bearing apparatus, comprising:
a sensor according to claim 1.

7. (Original) The bearing apparatus according to claim 6, further comprising:
a temperature detection circuit; and
a cable for connecting the sensor and the temperature detection circuit.

8. (Original) The bearing apparatus according to claim 7, wherein the temperature detection circuit has a resistor for converting an output of the sensor into a voltage.

9. (Original) An abnormality determining apparatus for an axle bearing, comprising:
a bearing apparatus according to claim 6.

10. (Currently Amended) The bearing apparatus according to claim 6, further comprising:
~~a rotation speed sensor;~~ at least one of a rotation speed sensor and a vibration sensor.

11. (Original) A bearing apparatus, comprising
a sensor according to claim 2.

12. (Original) The bearing apparatus according to claim 11, further comprising:
a temperature detection circuit; and
a cable for connecting the sensor and the temperature detection circuit.

13. (Original) The bearing apparatus according to claim 12, wherein

the temperature detection circuit has a resistor for converting an output of the sensor into a voltage.

14. (Original) An abnormality determining apparatus for an axle bearing, comprising:

a bearing apparatus according to claim 11.

15. (Currently Amended) The bearing apparatus according to claim 11, further comprising:

~~a rotation speed sensor;~~ at least one of a rotation speed sensor and a vibration sensor.

16. (Original) A bearing apparatus, comprising:

a sensor according to claim 3.

17. (Original) The bearing apparatus according to claim 16, further comprising:

a temperature detection circuit; and

a cable for connecting the sensor and the temperature detection circuit.

18. (Original) The bearing apparatus according to claim 17, wherein

the temperature detection circuit has a resistor for converting an output of the sensor into a voltage.

19. (Original) An abnormality determining apparatus for an axle bearing, comprising:

a bearing apparatus with the sensor according to claim 16.

20. (Currently Amended) The bearing apparatus according to claim 16, further comprising:

~~a rotation speed sensor;~~ at least one of a rotation speed sensor and a vibration sensor.

21. (New) The bearing apparatus according to claim 8, wherein an output $V_T$ of the temperature sensor from the temperature detection circuit satisfies the following equations:

$$V_T = \frac{R_{16}}{R_{16} + R_T} \times V_S \text{; and}$$

$$R_T = \frac{R_t \times R_{15}}{R_t + R_{15}} ,$$

wherein

$R_{16}$ is a first resistance value,

$R_t$ is an electric resistance value of the thermistor,

$R_{15}$ is a second resistance value,

$R_T$ is a combined resistance value of the thermistor and the second resistance value, and

$V_S$ is a power voltage supplied to the temperature sensor.

22. (New) The bearing apparatus according to claim 13, wherein an output $V_T$ of the temperature sensor from the temperature detection circuit satisfies the following equations:

$$V_T = \frac{R_{16}}{R_{16} + R_T} \times V_S \text{; and}$$

$$R_T = \frac{R_t \times R_{15}}{R_t + R_{15}} ,$$

wherein

$R_{16}$ is a first resistance value,

$R_t$ is an electric resistance value of the thermistor,

$R_{15}$ is a second resistance value,

$R_T$ is a combined resistance value of the thermistor and the second resistance value, and

$V_S$ is a power voltage supplied to the temperature sensor.

23. (New) The bearing apparatus according to claim 18, wherein an output $V_T$ of the temperature sensor from the temperature detection circuit satisfies the following equations:

$$V_T = \frac{R_{16}}{R_{16} + R_T} \times V_S \text{; and}$$

$$R_T = \frac{R_t \times R_{15}}{R_t + R_{15}} ,$$

wherein

$R_{16}$ is a first resistance value,

$R_t$ is an electric resistance value of the thermistor,

$R_{15}$ is a second resistance value,

$R_T$ is a combined resistance value of the thermistor and the second resistance value, and

$V_S$ is a power voltage supplied to the temperature sensor.